



Green Q: Program Overview

City of Seattle • Department of Planning and Development

www.seattle.gov/dpd/GreenQ



DPD applicants who are applying for new residential building permits under Seattle's 2006 Residential Code (SRC) will have the option of entering DPD's Green Q for expedited permit processing. New residential building permits do not include additions or alterations. Green Q does not apply to simple projects that already benefit from expedited review at DPD.

The Green Q will support Seattle's leadership role in climate change initiatives and further City Green Building's efforts to make sustainable design standard practice. The Green Q is a process strategy derived from recommendations made by Seattle's Green Building Capital Initiative. The process is designed to meet the objectives of the initiative by decreasing review time on green projects which will result in more construction of energy efficient buildings thereby reducing GHG emissions.

Benefits of the program include:

- Priority intake appointments
- 50% faster initial plan review times with no extra permit fees
- Application and review assistance from staff trained in green building strategies
- Public recognition

Commitments for participation in Green Q need to be made prior to intake so that the applicable documentation is provided with the Preliminary Application Form. Please review the **5 Steps to Successful Application** to find out which forms are required to enter the Green Q. Applicants will have their proposals screened by DPD staff to determine if the project meets the minimum standards for the queue.

The Green Q is in addition to the Priority Green Permitting pilot program which is available for more complex innovative land use and construction projects that meet the 2030 Challenge. The Priority Green program offers priority review and facilitation through an integrated team of reviewers.

About Review Times

In order to build capacity for a new system DPD has adjusted the target times and goals for all complex new residential construction applications. The goal for the Green Q will be to complete the initial plan review within

4 weeks. Similar scope applications not designed to the standards of Green Q will have an initial plan review time of 8 weeks.

DPD recognizes that meeting production goals will become challenging once the number of applications increases. Our goal with choosing thresholds for participation and the adjustment of target times is to ensure that we can meet the demand of all our DPD applicants. With lessons learned from this first phase, the second phase of the Green Q will include multi-family residential and non-residential projects designed to the 2006 Seattle Building Code (SBC). We anticipate the expansion of the program early in 2010.

Program Details

Green Q Prerequisites

To qualify for Green Q a structure must be designed to the 2006 Seattle Residential Code (SRC). See Client Assistance Memo 340 for guidance on whether a project is subject to the SRC.

A large home consumes more materials and energy than a small home over its life cycle. Generally, as home size doubles, energy consumption increases by roughly a quarter, and material consumption increases by roughly half according to LEED for Homes. To acknowledge the increased consumption, both LEED and Built Green adjust energy credits depending on the size of the dwelling unit; however, to qualify for Green Q, structures are limited in size to 2400 square feet of conditioned space per dwelling unit.

Seattle has adopted policies establishing new recycling goals for the City of Seattle and providing direction on waste-reduction programs and solid waste facilities. To assist in accomplishing waste-reduction goals, Green Q projects must submit a *Waste Management Plan* demonstrating that they will recycle or salvage for reuse at least 50% of construction waste based on weight. A sample of a waste management plan is available at the Green Q webpage (www.seattle.gov/dpd/greenQ).

The waste management plan must be submitted at construction permit intake appointments. If pursuing LEED or Built Green, recycling of construction waste at a 50%

rate or higher must be demonstrated on the preliminary checklist that is submitted. More information is provided at www.resourceventure.org/green-your-business/green-building/construction-waste-management/ which has links to the Green Tools Program Contractor's Guide and a Construction Waste Management Plan model.

LEED® (Leadership in Energy and Environmental Design) or Built Green™

To participate in the Green Q, projects that are designed and constructed at the following certification levels qualify after meeting the program prerequisites:

LEED® for Homes (version 2008 with 1/15/2009 errata)
Silver • Gold • Platinum

Built Green™ (version 2007)
4-star • 5-star

Both programs require third party verification at the required levels, and the contracting of a qualified 3rd party verifier with the applicable program. The Preliminary Application Form (PAF) required by DPD will require the simultaneous submittal of:

- ☐ LEED or Built Green Preliminary Checklist showing anticipated level of required certification.
- ☐ A copy of a signed contract with a 3rd party verifier approved under the program.
- ☐ A signed letter from 3rd party verifier approved under the program verifying anticipated certification level.
- Samples of these documents are available under related documents at www.seattle.gov/dpd/greenQ

Verification of Green Building

Correspondence from your 3rd party verifier to DPD that ongoing inspections and final inspections have occurred, and that the anticipated certification level is expected to be met will be required prior to final DPD inspection. The owner, owner's agent or person responsible must be aware that Green Q program requirements will become conditions of the permit; therefore, non-compliance with the conditions of the permit may be subject to a violation under the Building Code.



The GreenQ stamp used for documents and plans submitted under this program.

Green Q Alternative Path

DPD's Alternative Path is focused on energy efficiency and provides an option for applicants who chose not to pursue third party verification. The Green Q Alternative Path requirements closely align with the proposed 2009 Washington State Energy Code scheduled to be applicable in the summer of 2010. It is estimated that the requirements of the Alternative Path would result in structures that are 10 to 15% more efficient than the 2006 Energy Code. The alternative path is a prescriptive approach and includes three categories:

A. Mechanical Systems

B. Building Envelope

C. Plumbing Fixtures and Water Heating

Green Q Alternative Path requires compliance with all categories, A through C. The alternative path envelope requirements have been designed for wood-frame construction.

A. Mechanical Systems

Applicant must note and show on plans mechanical systems to demonstrate compliance with Green Q. **Please note that a separate mechanical permit will be required.**

Applicant chooses 1 of the 5 options below. When completing the *Heating Equipment Sizing Form, Proposed Space Heating Equipment (#6)* must be completed.

- ☐ Gas, propane or oil-fired furnace or boiler with minimum Annual Fuel Utilization Efficiency (AFUE) of 92% **OR**
- ☐ Air-source heat pump with minimum Heating Season Performance Factor (HSPF) of 8.5 **OR**
- ☐ Closed-loop ground source heat pump with a minimum Coefficient of Performance (COP) of 3.3 **OR**
- ☐ Ductless split system heat pumps, zonal control. In home where the primary space heating system is zonal electric heating, a ductless heat pump system shall be installed and provide heating to at least one zone of the housing unit **OR**
- ☐ 2400 kWh of electrical generation provided annually by on site wind or solar equipment.
Generation shall be calculated as follows: for solar electric systems, the design shall be demonstrated to meet this requirement using the National Renewable Energy Laboratory calculator PVWATTS. Documentation noting solar access shall be included on the plans. For wind generation projects designs shall document annual power generation based on the following factors. The wind turbine power curve; average annual wind speed at the site; frequency distribution of the wind speed at the site and height of the tower.

B. Building Envelope Requirements¹

- ☐ Choose row for less than or equal to 15% glazing ratio or more than 15% to 21% glazing ratio. Glazing ratio more than 21% glazing does not qualify for Green Q (see skylight exception under footnote 10)

Glazing Area ¹⁰ % of Floor	Glazing U-Factor		Door ⁹ U-Factor	Ceiling ²	Vaulted Ceiling ³	Wall ¹² Above Grade	Wall int ⁴ Below Grade	Wall ext ⁴ Below Grade	Floor ⁵	Slab ⁶ On Grade
	Vertical	Overhead ¹¹								
≤15%	0.28	0.50	0.20	R-49 or R-38 adv	R-38	R-21 int ⁷	R-21 w/ Thermal Break	R-10	R-38	R-10
>15% to 21%	0.28	0.50	0.20	R-49 or R-38 adv	R-38	R-21 + R-5 int ⁷	R-21 w/ Thermal Break	R-10	R-38	R-10

Footnotes:

¹ Applicant's choose option for ≤15% glazing ratio or 15% to 21% glazing ratio. Structures with more than 21% glazing to floor area ratio do not qualify for Green Q.

² Requirement applies to all ceilings except single rafter or joist vaulted ceilings complying with note 3. 'Adv' denotes Advanced Framed Ceiling.

³ Requirement applicable only to single rafter or joist vaulted ceilings.

⁴ Below grade walls shall be insulated either on the exterior (ext) to a minimum level of R-5, continuous or on the interior as a framed wall. Exterior insulation installed on below grade walls shall be a water resistant material, manufactured for its intended use, and installed according to the manufacturer's specifications. See Section 602.2.

⁵ Floors over crawl spaces or exposed to ambient air conditions.

⁶ Required slab perimeter insulation shall be a water resistant material, manufactured for its intended use, and installed according to manufacturer's specifications. See Section 602.4. For slabs inside a foundation wall, the insulation shall be installed to provide a thermal break between the slab edge and the foundation. Monolithic slabs shall include insulation, installed outside

the foundation wall, and shall extend downward from the top of the slab for a minimum distance of 24 inches or downward and then horizontally for a minimum combined distance of 24 inches. Monolithic slabs shall also include R-10 insulation under the non-load bearing portions of the slab.

⁷ Intermediate (int). denotes standard framing 16 inches on center with headers insulated with a minimum of R-10 insulation.

⁸ Blank

⁹ Doors, including all fire doors, shall be assigned default U-factors from Table 10-6C.

¹⁰ Where a maximum glazing area is listed, the total glazing area (combined vertical plus overhead) as a percent of gross conditioned floor area shall be less than or equal to that value. Overhead glazing with U-factor of U_f = .35 or less is not included in glazing area limitations.

¹¹ Overhead glazing shall have U-factors determined in accordance with NFRC 100 or as specified in Section 502.1.5.

¹² Log and solid timber walls with a minimum average thickness of 3.5" are exempt from this insulation requirement.

C. Plumbing Fixtures and Water Heating

Applicant must note and show on plans low flow fixtures in plumbing schedule. Please note that a separate plumbing permit will be required. Applicant chooses 1 of the 3 following water heating options.

- ☐ **Low Flow Requirements:** All showerhead and kitchen sink faucets installed in the house shall be rated at 1.75 GPM or less, all other lavatory faucets shall be rated at 1.0 GPM or less. All toilets shall be rated at 1.28 GPF **AND**
- ☐ Gas, propane or oil water heater with a minimum Energy Factor (EF) of 0.62 or Electric Water Heater with a minimum EF of .93 **OR**
- ☐ Solar water heating supplementing a minimum standard water heater. Solar water heating will provide a rated minimum savings of 85 therms or 2000 kWh based on the Solar Rating and Certification Corporation (SRCC) Annual Performance of OG-300 Certified Solar Water Heating Systems **OR**
- ☐ Electric Heat Pump Water Heater with a minimum EF of 2.0

Low flow plumbing fixtures and fittings (faucets and showerheads) shall comply with the following requirements:

- a. **Residential bathroom lavatory sink faucets** – Maximum flow rate: 3.8 L/min (1.0 gal/min) when tested in accordance with ASME A112.18.1/CSA B125.1.
- b. **Residential kitchen faucets** – Maximum flow rate: 6.6 L/min (1.75 gal/min) when tested in accordance with ASME A112.18.1/CSA B125.1.
- c. **Residential showerheads** – Maximum flow rate: 6.6 L/min (1.75 gal/min) when tested in accordance with ASME A112.18.1/CSA B125.1.
- d. **Residential toilets** – 1.28 gallons per flush with at least 350 gram waste removal – see Water Sense specification at www.epa.gov/WaterSense/specs/het_spec.htm

Verification of Alternative Path

DPD and King County Health Inspectors will verify that the building is constructed according to approved plans. The owner, owner's agent or person responsible must be aware that Green Q program requirements will become conditions of the permit; therefore, non-compliance with the conditions of the permit may be subject to a violation under the Building Code

Recommendations to Achieve Better Performance

It is recommended that applicants take additional steps to ensure energy efficient and sustainable buildings including, but not limited to, the following:

- Air sealing is an important factor when constructing an energy efficient home. The Green Q Alternative Path requirements provide the basis for an energy efficient home; however, performance testing to reduce air leakage is highly recommended to obtain the benefit from the envelope improvements under this program.
 - Perform blower door air leakage test.
 - Perform total duct leakage test.
- For ducts in un-conditioned space use Northwest Energy Star Homes requirements: R-8 insulation, mastic in lieu of any tape and maximum leakage of <0.06 cubic feet per minute per square feet or 75 cubic feet per minute total @ 50 Pascal.
- Use Energy Star qualified appliances.
- Use Energy Star fixtures or at least Energy Star bulbs like CFL's or LED's.
- Don't demolish the existing home – use deconstruction by submitting a waste diversion plan with your application.
- Manage stormwater by using Green stormwater infrastructure where appropriate. Green stormwater infrastructure is the term used by the City to describe best management practices that use infiltration, evapotranspiration, or stormwater reuse to manage stormwater runoff. Design criteria for a suite of these stormwater flow control and treatment facilities, including bioretention, landscaping, permeable paving, and green roofs are available at DPD.
- Reduce the use of water in addition to installing low flow plumbing fixtures. Consider recovering water for irrigation or toilet flushing. Resources for these systems available at DPD.
- Reference other green building rating systems and construct your home with the intent of meeting one of these programs:
 - Priority Green Permitting
 - LEED
 - Builtgreen
 - Living Building Challenge
 - NW Energy Star Homes

Key Contacts

The program participation levels and processes will be periodically evaluated and adjusted. Please share your comments and questions.

Jess Harris (206) 684-7744
Green Permitting Program Lead
jess.harris@seattle.gov

Helpful Resources

Green Q information

www.seattle.gov/dpd/greenQ

City Green Building

www.seattle.gov/dpd/Planning/CityGreenBuilding

Priority Green Permitting

www.seattle.gov/dpd/Permits/PriorityGreenPermitting

Seattle Energy Code

www.seattle.gov/dpd/Codes/Energy_Code

USGBC-LEED Rating Systems

www.usgbc.org

Builtgreen www.builtgreen.net

Living Building Challenge www.ilbi.org

Cascadia Region Green Building Council

www.cascadiagbc.org

NW Energy Star Homes www.northwestenergystar.com

Energy Star www.energystar.gov

Seattle's Green Building Capital Initiative

www.seattle.gov/mayor/PDF/090422PR-wGBCIpolicyReport.pdf

Preliminary Application Form (PAF) & 5 steps to Successful Application

www.seattle.gov/dpd/Publications/Forms

Residential Deconstruction

www.seattle.gov/dpd/Permits/Residential_Deconstruction

Seattle Public Utilities

www.seattle.gov/util/Services/Water/Reduce_Water_Use

Stormwater, Grading and Drainage Code Revisions

www.seattle.gov/dpd/Planning/Stormwater_Grading_and_Drainage_Code_Revisions/Overview/

